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REPORT

OF

THE WORKING GROUP

ANALYSIS, AND MEASUREMENT OF THE INCREMENTAL CAPITAL OUTPUT RATIO IN PUBLIC AND PRIVATE SECTORS IN THE SEVENTIES

GOVERNMENT OF INDIA
PLANNING COMMISSION
NEW DELHI

1985

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FOREWORD

The Report of the Working Group on Analysis and Measurement of the Incremental Capital Output Ratios in Public and Private Sectors in the Seventies constituted in connection with the formulation of the Seventh Plan is submitted herewith. In the Seventh Plan a very high priority has been placed on productivity improvement. This report presents the movement of the ICOR over time and separately for the public and private sectors. The movement of ICOR has been considered as one of the major indicators in estimating any achieved efficiency in the use of capital. For data limitations only broad groups of activities have been covered.

I express my deep appreciation for all help to all the members of the Working Group and specially to Dr. Padam Singh who as a Member-Secretary, has devoted long hours in completing this report. My special thanks are also due to all programmers working with the PPD, the members in the computing group and to Smt. Savita Sharma, Senior Research Officer, in the Division for her help. Also our gratitude to Dr. S.N. Ray, Executive Director, Computer Centre, Department of Statistics for providing many relevant data.

(S.P. GUPTA)
CHAIRMAN
WORKING GROUP

SUMMARY

This reports presents the estimates of the incremental capital output ratios seperately for public and private sectors at 14 sectors level of National Income Classification of CSO. The estimates have been worked out seperately for 60's and 70's and analysis of their behaviour has been attempted. Further, estimates of the average capital output ratios for manufacturing sector disaggregated at 2-digit level of National Industrial Classification have also been worked out. For this the data of Annual Survey of Industries for the year 1980-81 have been utilised. The results are obtained seperately for Census and Sample sectors and again seperately for public and private sectors. A capital coefficient matrix of 14 sectors with manufacturing disaggregated further into 13 sub-sectors on capital users side and 3 sectors on [illegible] supplier side is also given in the report.

Following are the salient findings of the report:

1. Aggregate ICOR for the public sector showed a declining trend. The sectors showing decline in their Public Sector ICORs are Construction, Railways, Public Administration and Defence, whereas those showing increase are Manufacturing, Electricity, Communication, Other Transport and Other Services.

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2. Aggregate ICORs for the Private Sector remained at the same level. The sectors which showed increase in their Private Sectors ICORs are Agriculture, including Forestry and Fishing, ~~Manuifacturing~~ and Trade, Hotels and Restaurants, and those showning decline are Electricity, Other Transport, and Other Services.

3. ICOR at the aggregate i.e., combined for Public and Private Sectors did not show any increase or decrease. Sectors which showed declining trend in aggregate ICORs are Railways, Other Transport and Banking & Insurance whereas the sectors which showed increasing trend are Mining, and quarrying, Construction, Electricity and Trade, Hotels and Restaurants.

4. The average capital output ratios for the manufacturing sub-sectors were higher for Public Sector as compared to Private Sectors.

5. Small Scale Sector (i.e., Sample Sector) showed a higher capital output ratios as compared to the Census sector in half of the Private Enterprises. Under Public Enterprises about 16% of the Industries showed a higher capital output ratio in the Small Scale activities as compared to Large Scale activities.

CHAPTER I

INTRODUCTION

Over the last thirty five years of planned economic development, India has achieved significant gains in many fields. In particular, domestic resource mobilisation for growth as reflected in gross domestic saving rate in India has more than doubled. Gross domestic saving rate in 1950-51 was at a very low level of 10.2. But in the latest year 1982-83 for which estimates are available it has risen to 22.3%. However, there has been an increasing concern in the recent years that overall rate of growth of the economy has not picked up commensurate with its record saving/investment rates. Long run rate of growth of gross domestic product at factor cost is around 3.5 per cent per annum. There are now definite signs that in the last decade this rate of growth has accelerated to the range of 4 to 5 per cent per annum. Nevertheless it is very important to know why the rate of growth has not been higher still.

It is in this context that the Research Advisory Committee of Planning Commission in the course of its deliberations in February 1983 recommended appointing a Working Group to study incremental capital output ratios of the Indian economy. Subsequently in connection with the formulation of Seventh Plan the Planning Commission set up a working group under the chairmanship of Dr. S.P. Gupta, Adviser, Perspective Planning Division, Planning Commission. The terms of reference of the working group are:

1) Estimation of sectoral incremental capital output ratios separately for public and private sectors in the seventies.
2) Analysis of incremental capital output ratio.

The following is the composition of the Working Group.

1. Dr.S.P. Gupta, Adviser(PP), Planning Commission	Chairman
2. Shri K.R. Paramesvar, Adviser(I&M), Planning Commission.	Member
3. Shri S.L. Khosla, Adviser(Energy), Planning Commission	Member
4. Shri B. Swaminathan, Adviser(Finance), representative of Bureau of Public Enterprise	Member
5. Shri Jagdish Kumer, Additional Director, CSO	Member
6. Dr. S.S. Srivastava*, Additional Director, CSO	Member
7. Dr.(Mrs.) R. Thamarajakshi, Adviser, Labour & Employment Division, Planning Commission	Member
8. Shri V.S.V. Rao, Industrial Adviser, Representative of DGTD.	Member
9. Dr. V.P. Chitale, Deputy Director, Representative of FICCI	Member

10. Dr. N.S. Sidhrathan, Institute of Economic Growth.	Member
11. Prof. A.K. Bagchi, National Institute of Fiscal Policy.	Member
12. Dr. Narottam Shah, Director, CMIE	Member
13. Mr. Nitin Desai, Adviser(PAD), Planning Commission	Member
14. Shri T.G.Srinivasan, S.R.O., Planning Commission	Member
15. Dr.Padam Singh, Joint Adviser(PP), Planning Commission.	Member-Secretary

The recommendations of the Working Group on the issues relating to the terms of reference are discussed in the subsequent chapters.

* Shri H.K. Chawla, OSD, CSO was substituted for Dr. S.S. Srivastava in view of Dr. Srivastava's transfer from CSO to Pay Commission Office.

CHAPTER II

Estimation of Incremental Capital Output Ratios at 14 sector level of National Income Classification

2.1 The incremental capital output ratio (ICOR) is defined as the ratio between the volume of investment in a sector and the corresponding increase in the volume of output (measured in value added terms) in the sector.

2.2 Incremental capital output ratios have been estimated separately for public and private sectors using National Accounts Statistics. This source permits computation of ICORs for fourteen broad sectors of the economy. The data utilised relates to the period 1960-61 to 1980-81 as data before this period is not available separately for public and private sectors. The estimation of Incremental capital output ratios have been done for each sector by regressing the cumulative investment on value added 1/ At sectoral level the value added is measured at 70-71 price and at factor cost and the investment is measured as gross and at 70-71 market price. However, for the economy as a whole the measure of gross domestic product is available both at factor cost as well as at market prices.

1/ Specification

$CI_t = a+bV_t$

where

CI_t = Cumulative Investment upto period 't'

V_t = Value added in period 't'

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Further, the base period capital stock for the year 1960-61 has been obtained from CSO and added to subsequent year investments to get the cumulative gross investment to the base period value. The regression co-efficient under this specifications (i.e. slope co-efficient) gives directly the estimate of incremental capital output ratio. This specification possess a property that ICOR estimates are invariant to the initial capital stock consumption. This estimate can be treated as average for the t considered.

2.3 For studying the behaviour of ICOR over time, regression estimation has been done separately for the periods 1960-61 to 1970-71 and 1970-71 to 1980-81. The estimates for ICOR for these two periods have been utilised for studying the trend of ICOR overtime. If for a sector the contribution of public/private to value added or investment is less than 5 per cent the same is ignored in the analysis. The significance of the difference in the estimated ICORs for two periods has also been tested. Valuation for both investment and value added is at constant 1970-71 prices. The results on the estimated ICORs separately for public, private sectors and combined for the periods 1960-61 to 1970-71 and 1970-71 to 1980-81

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are presented below:

Table - A: Estimates of ICORs

Sector	Public		Private		Combined	
	1960-70	1971-81	1960-70	1971-81	1960-70	1971-81
1.Agriculture including Forestry and Fishing	20.57	15.71	1.35	2.02	1.88	2.88
2.Mining & Quarrying	6.84	16.68	-	-	6.84	16.68
3.Manufacturing	11.31	18.28	6.29	6.36	7.47	8.33
4.Construction	3.03	0.99	1.66	0.85	1.78	2.00
5.Electricity	17.25	25.51	9.45	3.71	17.00	22.46
6.Railways	18.97	8.71	-	-	18.97	8.71
7.Communication	5.13	5.64	-	-	5.13	5.64
8.Other transport	7.19	7.92	6.89	4.01	7.26	5.19
9.Trade, hotels & Res.	-	-	1.31	3.34	1.31	3.34
10.Banking & Insurance	0.36	0.46	(-)0.05	0.62	0.82	0.56
11.Public Admn.& defence	5.58	3.33	-	-	5.58	3.33
12.Other Services	0.96	1.31	28.08	5.85	14.65	12.78
13.Total	8.32	7.00	4.06	4.75	5.32	5.85

2.4 It is important to mention here that the activities in public and private sectors under same head/sector are different and, therefore, the ICOR estimates should not be taken as the exclusive index for comparing relative efficiency of public and private sectors. Following observations may be made from the results obtained under this analysis.

Aggregate i.e. combined for Public and Private Sectors

2.5 On the basis of tests of significance applied for testing the change in ICOR it is observed that the sectors where ICOR has remained at the same level in 60s and 70s are Agriculture including forestry and fishing, Manufacturing, Communication, and other services.

2.6 Sectors which showed declining trend in ICOR are railways, other transport and banking and insurance.

2.7 The sectors which showed increasing trend in ICOR are mining and quarrying, construction, electricity and trade, hotels and restaurants.

Public Sector

2.8 ICOR for the public sectors showed a declining trend at the aggregate level. The sectors which showed declining trend for public sectors are construction, railways, pullic administration and defence.

2.9 The sectors which showed an increase in the public sector ICORs are manufacturing, electricity, communication, other transport and other services.

Private Sector

2.10 Aggregate ICORs for the private sector remained at the same level. The sectors which showed declining trend in ICORs are electricity, 'other transport' and 'other services'.

2.11 ICOR showed increasing trend for agriculture including forestry and fishery and trade, hotels and restaurants.

CHAPTER III

Capital Output Ratios for the different manufacturing activities under public and private establishments

3.1 As the separation between public and private sector capital formation in detailed disaggregation within manufacturing group is not available in the National Accounts Statistics, the capital output ratios for the manufacturing sector at disaggregated level has been studied using the data of Annual Survey of Industries (ASI). The ASI covers the whole factory sector separated into a Census and a Sample Sub-sectors. The Census part includes all establishments with employees 50 or more with power and 100 or more without power. Remaining registered establishments i.e. with employees 10 or more with power and 20 or more without power are included in the Sample Sector with around 50 per cent sampling of all units. It may be noted that the private establishment has been defined here as covering also all joint sector establishments. For the unregistered sectors, because of lack of information, no similar study could be made.

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3.2 Disaggregated study for the factory sector even on 2-digit basis could not be done as time series information is not tabulated/published separately for public and private sectors. For our Working Group a special tabulation has been obtained from CSO on the latest and easily accessible ASI data of the years 1979-80 and 1980-81 in order to get public and private break-up of capital output ratios for all detailed manufacuring sectors.

3.3 Because of the availability of data only for two years, estimates of ICOR were found to be unreliable. Therefore, average capital output ratios have been calculated for 1980-81.

3.4 Table-B below presents the share of value added in manufacturing to its constituents i.e. registered and un-registered sector. Further, within the registered sector the shares of public and private sectors of the Census and the Sample part.

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Table B: Share of Value added of Manufacturing 1980-81

(in per cent)

	Census Sector	Sample Sector	Total
Public	35	1	36
Private	53	11	64
Total	88	12	100.00
Registered Sector			67
Unregistered Sector			33

3.5 Share of value added of manufacturing in registered sector was 67 per cent and that for unregistered 33 per cent. The Census sector covers 88 percent of the registered manufacturing and the remaining 12 per cent is covered by sample sector. Public sector contributes to 40% to Census sector and 8% of sample sector.

3.6 Before discussing the results it is important to mention the fact that these capital output ratios have been estimated using the book values of the invested capital whereas conceptually those should have been corrected for depreciation as also for accumulation at current prices. Table-C below presents the comparison of capital output ratios for organised manufacturing sector as estimated from National Accounts Statisttcs and Annual Survey of Industries for a quick comparison and knowing the direction of bias which should be kept in mind while reading the disaggregated average capital output output ratios.

Table C: Estimates of Capital Output Ratios-1980-81

	Annual Survey of Industries		National Accounts (1977)*	
	Census	Sample	Registered	Unregistered
Public	6.1	2.1	-	-
Private	2.9	2.2	-	-
Combined	3.6	2.2	4.16	2.99

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* As worked out M/s. Pratap Narain and R.P. Katyal in 'Long-Term Trends in Capital Output Ratios', The Journal of Income and Wealth, Vol 4, No.2, July 1980.

3.7 Tables 5 and 6 present the average capital output ratios at 2-digit NIC level. The capital output ratios in the public sector are higher than the private sectors for all groups with only one exception of manufacture of beverages, tobacco and tobacco products.

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3.8 In half the industry groups under private sector the small scale establishments (sample sector) show a higher capital output ratio than the large establishments (census sector). Similarly, under the public sector nearly 16 per cent of the industry groupings show a higher capital output ratios in the small scale activities (sample sector) as compared to their larger counterpart (census sector). This fact is extremely difficult to explain. This indirectly suggests than in some of the small scale enterprises, specially pertaining to the private sector and with the only exception of coal and coal products in the public sector, the small sized units have become more capital using perhaps because of lower utilisation of capital stock compared to their larger partners. An answer to this would be very much warranted, in future investments strategy in industry. If this is a fact that the higher capital output ratios in most of the small scale sectors are associated with a higher employment co-efficients, then there is a case of their choice on the grounds of employment generation considered against the target of productivity improvement in the ensuing Plans.

CHAPTER - IV

ESTIMATION OF CAPITAL COEFFICIENT MATRIX

4.1 The Sixth Five Year Plan incorporated for the first time an investment planning block in its formal algebraic model. For this purpose sectoral incremental capital output ratios, were used along with a compatible capital coefficient matrix. The details of the estimates and methodology are explained in the Technical Note to the Sixth Five Year Plan. In the formal Sixth Plan model investment allocations could be indicated only for 14 broad groups of sectors of the economy because of data limitations. However, the number of heads of public plan expenditure run into about seventy. In order to capture more formalism in investment allocations in the five year plans it is necessary to work at more disaggregated levels in the capital coefficient matrix and sectoral incremental capital output ratios. This need is very much felt for the manufacturing sector which at present is represented as a single sector.

capital coefficient matrix prepared for the Sixth Five Year Plan is extended to include different sub-groups within the manufacturing sector. Basic source of information on capital formation by type of assets used for this purpose is Annual Survey of Industries. The average norms observed for the period 1975-78 has been considered for building into the capital coefficient matrix of 1979-80. Time-series of all relevant variables compiled by Dr. Bakul H. Dholakia and presented in his report of the study on 'Behaviour of Capital Output Ratios in Indian Economy'* have been made use of in this regard. Various stages in the preparation of capital coefficient matrix for sub-groups of manufacturing are:

i) Generation of net capital formation at 2-digit levels by asset categories for the period 1975-78 at current prices.

ii) Derivation of deflated series (at 1970-71 prices) of net capital formation at 2-digit levels by asset categories for the period 1975-78.

iii) Derivation of average capital formation for the period 1975-78 at 2 digit levels by asset categories at 1970-71 prices.

iv) Generation capital coeffiecnts for 2-digit level industries.

It may be mentioned that the asset categories for which

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*This is a study sponsered by Planning Commission and report was brought out in 1983, by Indian Institute of Management,Ahmedabad.

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information was available for the following:

i) Buildings, construction & Land Improvements
ii) Plant and Machinery
iii) Other fixed assets
iv) Inventories.

Of the above categories, 'Buildings, construction and Land improvements' has been treated as 'Construction'; plant and machinery taken together with other fixed assets has been treated as 'Machinery and Equipment'; inventories are read as stocks.

4.3 Table 3 presents the capital coefficient matrix for 1979-80 prepared as per the methods explained above. For sectors other than manufacturing, information draws upon the Technical Note to the Sixth Five Year Plan. In contrast to the 14 sector capital coefficient matrix prepared for the Sixth Plan we now have a break up of manufacturing into 13 sub-groups.

4.4 As can be seen from this table that the coefficients shown for manufacturing sector marginally differ between the Technical Note and the aggregate of sub-groups now derived (shown in brackets). This apart, a few other points will have to be considered further before this extended capital coefficient matrix is put to use in the plan models. The estimates now prepared for sub-groups of manufacturing are at 1970-71 prices whereas for the rest of the sectors estimates are at 1979-80 prices. ASI covers onl registered or organised manufacturing activity whereas unregistered activities account for ~~35%~~ of the gross value added in manufacturing activities. The estimates of ICOR as well as capital coefficients therefore will have to be adjusted to capture also unregistered activities before operational use.

Appendix

Incremental Capital Output Ratio (ICOR) refers to the ratio of incremental capital stock, which is investment, to incremental output. It is a macro-economic indicator of the marginal productivity of capital first used in Harrod's Model of economic growth. Even now popular growth arithmetic makes use of rate of investment and reciprocal of ICOR at the national level to determine growth possibilities. With the advent of multi sectoral models sectoral ICORs are used to determine sectoral investment requirements, given desired additions to sectoral capacities, and vice versa. ICOR is to be distinguished from a related measure average capital output ratio in which numerator is capital a stock variable and denominator is output, a flow variable. However, measuring capital as a stock is rendered difficult because of the varying vitages of accretions to it and equally difficult a task of measuring depreciation of existing capital stock. Only in the limiting case with no technical progress of the embodied type ~~and constant average capital-output ratio,~~ ICOR would be equal to average capital output ratio.

A production process can be described summarily in terms of a product function. In a production process factors like capital, labour and land along with other material inputs yield efficiently an output given a technology of combining ~~them~~ them. By setting out value of material input use from value of output a relation between value added and factor applications can be deduced. This transformation is particularly useful when all the sectors of the economy including service sectors are to be considered.

ICOR is not merely a technical data in the sense of an engineering norm. It represnts also a host of institutional factors such as number of shifts operated and behavioural factors like inventory holdings contingent upon expectations regarding the behaviour of all relevant market variables.

In spite of the wide use while interpreting ICOR a number of caveats are necessary. An investment programme could spread over a few years. In such a case by relating investment and incremental output of one year we tend to overestimates true ICOR, along. Even if investment bears fruit during the same accounting year, at the empirical level private sector companies follow various demarcation of accounting year which is not necessarily the same as reported year for the survey results. Prevalence of price controls/ preferences could distort true ICOR. Time phasing of investments for sectors spread over many years is a critical information to estimate~~s~~, even if the length of gestation lag is determined. At the empirical level when we observe a group of firms for estimation of ICOR, we confront a situation in which some of the firms have undertaken no new investment, some firms have just finished investment activity and have started production, some are undergoing an investment programme either as fresh entrants or for expansion. On the output side infrastructural constraints and labour relations could seriously distort observed levels of production. Apart from production, demand conditions and the impact of these factors could vary across the firms under study. In addition even if sectoral ICORs remain the same composition of products/sectors change over time and the overall measure of ICOR would register an increase. All these qualifications render judgement about productivity of investment by looking at ICOR alone disregarding supplementary information on utilisation product/sector composition and vintage of capital equipment and infrastructural factors, unjustified.

Table - 1

Incremental Capital Output Ratio - Total

Sl No	Sectors	1960-61 to 1970-71 Reg. coeff.	T value	R^2	1970-71 to 1980-81 Reg. coeff.	T value	$*R^2$
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Agriculture including forestry & fishing	1.88	3.186	.59	2.88	3.35	0.55
2.	Mining & Quarrying	6.84	12.18	.94	16.68	10.69	.93
3.	Manufacturing	7.47	8.75	.89	8.33	12.98	.95
4.	Cons-truction	1.78	30.08	.99	[illegible]2.00	3.96	.64
5.	Electricity	17.02	42.45	.99	22.46	19.72	.98
6.	Railways	18.97	25.86	.99	8.71	7.99	.88
7.	Communication	5.13	22.60	.98	5.64	42.79	.99
8.	Other transport	7.26	26.15	.99	5.19	23.24	.98
9.	Trade, hotels & Res.	1.31	12.39	.94	3.34	16.88	.97
10.	Banking & Insurance	0.82	10.45	.92	0.56	1.97	.90
11.	Public Administration and defence	5.58	24.14	.98	3.33	11.30	.93
12.	Other services	14.65	14.60	.96	12.78	28.87	.99
1e.	Total	5.32	10.62	.93	5.85	10.74	.93

* Corresponds to market price figure of value added.

1/ [illegible]

Table 2

INCREMENTAL CAPITAL OUTPUT RATIO - PUBLIC

Sectors	1960-61 to 1970-71			1970-71 to 1980-81		
	Reg. Coeff.	T.Value	R^2	Reg. Coeff.	T.Value	R^2
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Agriculture including forestry and fishing	20.57	23.73	.98	15.71	29.15	.99
2. Mining & Q.	10.05	8.71	.89	7.83	8.12	.88
3. Manufacturing	11.31	7.59	.88	18.28	13.38	.95
4. Construction	3.03	22.15	.98	0.99	17.28	.93
5. Electricity	17.25	29.28	.99	25.51	21.26	.98
6. Railways	18.87	27.44	.99	8.69	8.04	.88
7. Communication	5.13	12.60	.98	5.64	42.72	.99
8. Other transport	7.19	29.75	.99	7.92	17.09	.97
9. Trade, hotels & restaurants	-	-	-	-	-	.66
10. Banking & Insurance	0.36	10.12	.92	0.46	14.95	.96
11. Public Admn. and defence	5.59	23.99	.98	3.23	11.29	.93
12. Other services	0.96	36.86	.99	1.31	14.81	.96
13. Total	8.32	37.17	.99	7.00	30.39	.99

Table 3

Incremental Capital Output Ratio - Private

Sector	Reg.Coeff. 1960-61 to 1970-71	T.value 1960-61 to 1970-71	R^2	Reg.Coeff. 1970-71 to 1980-81	T.value	R^2
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Agriculture including forestry & fishing	1.35	3.05	.51	2.02	3.02	.50
2. Mining & Quarrying	-	-	-	-	-	-
3. Manufacturing	6.29	8.70	.89	6.36	11.71	.94
4. Construction	1.66	26.71	.99	0.85	1.06	.11
5. Electricity	9.45	4.68	.71	3.71	3.94	.63
6. Railways	-	-	-	-	-	-
7. Communication	-	-	-	-	-	-
8. Other transport	6.89	17.78	.97	4.01	17.94	.97
9. Trade, hotels & restaurants	.90	14.76	.96	2.43	10.97	.93
10. Banking & Insurance	0.05	.09	.01	0.62	3.61	.59
11. Public admn. & defence	-	-	-	-	-	-
12. Other services	28.08	5.43	.77	5.85	0.39	.02
13. Total	4.06	8.00	.88	4.75	6.35	.82

Capital Coefficient Matrix for 1979-80

S.No.	Sector	Construction	Machinery Equipment	Change in stock
1.	Agriculture	0.61	0.35	0.04
2.	Forestry & Logging	1.00	0.00	0.00
3.	Fishing	0.00	1.00	0.00
4.	Mining & Quarrying	0.33	0.63	0.04
5.*	Manufacturing	0.32(0.28)	0.50(0.55)	0.18(0.17)
1)	Manufacturing of food products	0.27	0.41	0.32
2)	Manufacturing of Beverages: Tobacco & Tobacco Products	0.13	0.20	0.67
3)	Manufacturing of Textiles	0.31	0.67	0.02
4)	Manufacturing of Wood & crok, Furniture & Firetines	0.35	0.46	0.19
5)	Manufacturing of Paper & Paper products, printing, publishing and allied industries	0.32	0.58	0.10
6)	Manufacturing of leather and and leather products(except footwear & other wearing apperal)	0.19	0.25	0.56
7)	Manufacturing of Rubber and rubber products petroleum products and coal products.	0.23	0.63	0.14
8)	Manufacturing of Chemical and chemical products	0.32	0.51	0.17
9)	Manufacturing of Non-Metallic Mineral products(except products of petroleum & coal)	0.32	0.44	0.24
10)	Basic Metal Industries	0.26	0.65	0.09
11)	Manufacturing of metal products(except Machinery and transport equipment)	0.24	0.50	0.26
12)	Manufacturing of Machinery and Equipment	0.30	0.43	0.27
13)	Miscellaneous manufacturing Industries	0.19	0.37	0.44
6.	Construction	0.47	0.40	0.13
7.	Electricity, Gas & water supply	0.31	0.63	0.06
8.	Railways	0.46	0.39	0.15
9.	Other Transport	0.50	0.43	0.07
10.	Communication	0.64	0.36	0.00
11.	Trade, storage & Warehouses	0.30	0.30	0.40
12.	Banking & Insurance	0.50	0.50	0.00
13.	Real Estate & ownership of dwellings	1.00	0.00	0.00
14.	Public administration, defence and other services	0.90	0.05	0.05

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* [illegible] 1975-78 at 1970-71 prices

Table 5: Estimates of ACOR in Public Sector for 1980-81

NIC Code	Description	Census sector	Non-census sector	Total (factory sector)
20.	Manufacture of Food Product	6.55	5.31	6.42
21.	Manufacture of Beverages	2.51	3.62	2.67
22.	Manufacture of Tobacco and Tobacco product	1.73	0.83	1.61
23.	Manufacture of Cotton Textiles	1.78	2.43	1.80
24.	Manufacture of wool, silk and Synthetic Fibre Textiles	3.27	2.76	3.23
25.	Manufacture of Jute, Hemp and Mesta Textiles	2.01	4.81	2.03
26.	Manufacture of Textiles products(incl. WearingApparel other than Footwear)	3.20	1.82	2.25
27.	Manufacture of wood and wood products, Furniture and Fixtures	2.03	3.64	2.63
28.	Manufacture of paper and paper products and printings, publishing and allied industries	4.01	1.28	3.90
29.	Manufacture of leather and fur products (except Repair)	6.96	3.85	5.89
30.	Manufacture of Rubber, Plastic, Petroleum and coal products	6.05	4.79	6.05
31.	Manufacture of Chemical and Chemical products(except products of Petroleum and coal)	7.44	3.55	7.38
32.	Manufacture of Non-Metallic Mineral products	4.79	3.27	4.72
33.	Basic Metal and Alloys Industries	7.83	2.09	7.81
34.	Manufacture of Metal products and parts except Machinery & Transport equipment	2.12	2.47	2.16
35.	Manufacture of Machinery Machine Tools and Parts except Electricial Machinery	3.98	2.42	3.93
36.	Manufacture of Electrical Machinery Apparatus Appliances and Supplies and Parts	3.70	3.54	3.69
37.	Manufacture of Transport Equipment and parts	3.87	1.63	3.86
38.	Other Manufacturing Industries	3.86	2.06	3.81
40.	Electricity	7.41	-	7.41
41.	Gas and Seam	9.81	1.72	3.15
42.	Water works and Supply	.55	2.19	2.46
74.	Storage and Warehousing	5.63	2.58	2.70
97.	Repair Services	1.00	0.58	0.88

Table 6: Estimates of ACOR in Private Sector for 1980-81

NIC Code	Description	Sensus sector	Non-census sector	Total (factory sector)
20.	Manufacture of Food Product	3.40	2.76	3.23
21.	Manufacture of Beverages	2.36	3.01	2.49
22	Manufacture of Tobacco and Tobacco product	2.04	1.33	1.79
23.	Manufacture of Cotton Textiles	1.57	2.41	1.60
24.	Manufacture of wool, silk and Synthetic Fibre textiles	2.23	1.96	2.20
25.	Manufacture of Jute, Hemp and Mesta Textiles	0.97	1.87	0.98
26.	Manufacture of Textile products (including Wearing Apparel other than Footwear)	1.98	2.17	2.05
27.	Manufacture of wood and wood products, Furniture and Fixtures	2.54	2.02	2.27
28.	Manufacture of paper and paper products and Printings, Publishing and Allied Industries	2.11	1.93	2.07
29.	Manufacture of Leather and fur products (except repair)	2.36	3.08	2.55
30.	Manufacture of Rubber, Plastics, Petroleum and Coal products	2.19	2.02	2.14
31.	Manufacture of Chemical and Chemical products (except products of petroleum and coal)	2.19	2.41	2.22
32.	Manufacture of Non-Metallic Mineral products	2.34	1.99	2.28
33.	Basic Metal and Alloys Industries	2.32	2.51	2.35
34.	Manufacture of Metal products and parts except Machinery and Transport Equipment	1.69	2.45	1.90
35.	Manufacture of Machinery Machine Tools and parts except Electrical Machinery.	2.08	1.73	2.00
36.	Manufacture of Electrical Machinery Apparatus Appliances and Supplies and Parts	1.61	2.38	1.72
37.	Manufacture of Transport Equipment and parts	2.14	2.26	2.15
38.	Other Manufacturing Industries	1.51	2.10	1.67
40.	Electricity	4.32	-	4.32
41.	Gas and Seam	1.87	2.40	2.31
42.	Water works and Supply	-	0.44	0.44
74.	Storage and Warehousing	3.53	3.24	3.30
97.	Repair Services	1.04	1.72	1.44

Table 7: Share of GDP and GDCF of Public Sector in total in 1980-81

Sectors	Share of GDP	Share of GDCF
1. Agriculture	2.39	31.49
2. Forestry and Fishing	20.80	31.19
3. Mining and Quarrying	82.05	98.78
4. Manufacturing	14.04	37.82
5. Construction	24.05	39.62
6. Electricity	87.01	85.38
7. Railways	100.00	100.00
8. Communication	100.00	100.00
9. Other Transport	25.40	40.88
10. Trade, hotels and Restaurants	3.10	10.25
11. Banking and Insurance	77.70	66.67
12. Public Administration and defence	100.00	100.00
13. Other services	40.96	13.44
14. Total	23.28	45.45